

ABSTRACT

An optical amplifier, provided in a WDM transmission system, contains an amplification medium for amplifying WDM light, a measurement part for measuring at least one input optical power of the WDM light on both input and output sides of the amplification medium, a variable gain equalizer for variably setting a passing-wavelength characteristic, a database for holding data representing wavelength characteristics that respectively correspond to transmission line types, an arithmetic part for computing an inverted passing-wavelength characteristic resulting from a passing-wavelength, based on an acquired transmission line type, the optical power measured by the measurement part, and the data held in the database, and a setting part for setting a passing-wavelength characteristic of the variable gain equalizer, based on the inverted passing-wavelength characteristic computed by the arithmetic part, and with this, capable of controlling optical filters more quickly and amplifying optical signals more efficiently in WDM systems.